Sandy Hook, New Jersey, 16th.
Barnegat City, New Jersey, 16th.
Fort Macon, North Carolina, 16th.
Hatteras, North Carolina, 10th, 14th, 16th.
New River Inlet, North Carolina, 1st, 2d, 9th, 10th, 16th, 17th.
Kitty Hawk, North Carolina, 14th, unusually high.
Philadelphia, Pennsylvania: the tide in the river on the 16th was the highest known since February, 1876, and in many places the water overflowed the wharves.

LOW TIDES.

Eastport, Maine, 2d, 3d, 24th.
Indianola, Texas, 15th.

TEMPERATURE OF WATER.

The following table shows the highest and lowest temperatures of water at the several stations; the monthly ranges of water temperature; the average depth at which the observations were made; and the mean temperature of the air:

At Block Island, Rhode Island, observations were made from 11th to 28th, only; at New Haven, Connecticut, the harbor was frozen from 22d to 28th, during which time no observations were made; at Chincoteague, Virginia, observations were interrupted by ice from 21st to 24th; at Marquette, Michigan, no record was made, the signal office having been burned.

Temperature of water for February, 1885.

Station.	Temperature at bottom.		Range.	Average depth, feet and tenths.	Mean temperature of the air at station.
	Max.	Min.			
	°	°	°		°
Atlantic City, New Jersey	35.8	29.5	6.0	2 7	25.7
Alpena, Michigan †					
Augusta, Georgia	59.7	36.6	13.1	12 0	42.8
Baltimore, Maryland	35.1	31.9	3.2	9 8	28.5
Block Island, Rhode Island*	34.0	29.0	5.0	7 0	24.2
Boston, Massachusetts	30.0	28.6	1.4	21 9	20.5
Buffalo, New York †					
Canby, Fort, Washington Territory	47.1	42.1	5.0	17 2	45.7
Cedar Keys, Florida	62.3	53.4	8.9	9 6	54.9
Charleston, South Carolina	57.0	45.1	11.9	40 8	47.5
Chicago, Illinois †					
Chincoteague, Virginia *	40.5	30.1	10.4	5 6	31.5
Cleveland, Ohio †					
Detroit, Michigan †					
Delaware Breakwater, Delaware	35.3	19.8	15.7	9 8	28.4
Duluth, Minnesota †					
Eastport, Maine	35.3	32.5	2.8	14 7	18.5
Escanaba, Michigan †					
Galveston, Texas	60.4	45.3	15.1	12 4	52.6
Grand Haven, Michigan †					
Indianola, Texas	61.9	45.1	16.8	9 0	51.7
Jacksonville, Florida	59.0	54.0	5.6	18 0	51.3
Key West, Florida	76.8	64.0	12.8	17 2	68.2
Mackinaw City, Michigan †					
Macon, Fort, North Carolina	52.2	42.0	10.2	6 8	41 5
Marquette, Michigan *					
Milwaukee, Wisconsin †					
Mobile, Alabama	75.4	43.1	32.3	16 5	48.3
New Haven, Connecticut *	31.2	29.7	1.5	16 4	19.7
New London, Connecticut	36.9	32.9	4.0	11 4	22.7
New York City	33.0	30.4	2.6	15 9	23.1
Norfolk, Virginia	44.4	33.8	10.6	17 1	37.2
Pensacola, Florida	58.3	49.5	8.5	10 9	50.7
Portland, Maine	33.3	30.3	3.0	16 8	20.3
Portland, Oregon	46.5	40.6	5.9	59 0	47.1
Sandusky, Ohio †					
Sandy Hook, New Jersey	36.3	31.1	5.2	1 9	25.2
San Francisco, California	54.8	53.1	1.7	36 9	54.4
Savannah, Georgia	51.2	41.1	10.1	10 0	49.6
Smithville, North Carolina	51.0	45.5	5.5	10 6	42.5
Toledo, Ohio †					
Wilmington, North Carolina	49.5	41.0	8.5	14 5	45.1

* Record incomplete—see text. † Frozen the entire month.

VERIFICATIONS.

INDICATIONS.

The detailed comparison of the tri-daily indications for February, 1885, with the telegraphic reports for the succeeding twenty-four hours, shows the general average percentage of verifications to be 82.79 per cent. The percentages for the four elements are: Weather, 85.08; direction of the wind, 77.92; temperature, 82.19; barometer, 88.88 per cent. By geographical districts, they are: For New England, 83.93; middle Atlantic states, 83.89; south Atlantic states, 83.25; eastern Gulf states, 84.18; western Gulf states, 84.77; lower lake region, 83.72; upper lake region, 81.87; Ohio valley and Tennessee, 82.76; upper Mississippi valley, 83.19; Missouri valley, 74.83; north Pacific coast region, 96.00; middle Pacific coast region, 76.92; south Pacific coast region, 97.22. There were twenty omissions to predict out of 3,011, or 0.66 per cent. Of the 2,991 predictions that have been made, eighty-four, or 2.81 per cent., are considered to have entirely failed; one hundred and twenty-nine, or 4.31 per cent., were one-fourth verified; four hundred and twenty-seven, or 14.28 per cent., were one-half verified; four hundred and eighty-two, or 16.11 per cent., were three-fourths verified; 1,869, or 62.49 per cent., were fully verified, so far as can be ascertained from the tri-daily reports.

CAUTIONARY SIGNALS.

During February, 1885, one hundred and sixty cautionary signals were ordered. Of these, one hundred and forty-four, or 93.75 per cent., were justified by winds of twenty-five miles or more per hour at or within one hundred miles of the station. Seventy-seven cautionary off-shore signals were ordered, all of which were justified as to direction, and seventy, or 90.90 per cent., were justified as to velocity. Two hundred and thirty-seven signals of all kinds were ordered, two hundred and twenty, or 92.83 per cent., being fully justified. These do not include signals ordered at display stations where the velocity of the wind is only estimated. Of the above cautionary off-shore signals, fifty-four were changed from cautionary signals. Six signals were ordered late. In eighty-four cases winds of twenty-five miles or more per hour were reported for which no signals were ordered.

COLD-WAVE SIGNALS.

During February, 1885, there were one hundred and forty-five cold-wave signals ordered, of which number one hundred and twenty-nine, or 89.0 per cent. were justified.

RAILWAY WEATHER SIGNALS.

The following is from the February, 1885, report of the "Alabama Weather Service," under direction of Professor P. H. Mell, jr.:

The predictions for the month of February telegraphed by General Hazen, the Chief Signal Officer, were as follows:

Local rains.—5th, 8th, 9th, 12th, 13th, 14th, 15th, 18th, 24th, 25th.

Fair weather.—1st, 2d, 3d, 4th, 6th, 7th, 10th, 11th, 16th, 17th, 19th, 20th, 21st, 22d, 23d, 26th, 27th, 28th.

Lower temperature.—1st, 2d, 5th, 6th, 9th, 10th, 13th, 16th, 18th, 20th.

Higher temperature.—3d, 4th, 7th, 8th, 12th, 14th, 15th, 17th, 22d, 23d, 24th, 26th, 27th, 28th.

Stationary temperature.—11th, 19th, 21st, 25th.

Cold wave signals ordered 8th, 9th, 16th.

A careful examination of the meteorological reports from all quarters of the state shows the verification of the weather predictions to be 92 per cent. and of the temperature 94 per cent.

ATMOSPHERIC ELECTRICITY.

AURORAS.

During February, 1885, there occurred two auroral displays which were widely observed in the northern districts; these were observed during the nights of the 5–6th and 11–12th, and were reported by numerous stations from New England westward to Montana. The following reports relating to the displays of February have been received:

Captain Irving, commanding the s. s. "Republic," reports having observed an aurora on the 5th in latitude N. 49°, longitude W. 34°.

Point Judith, Rhode Island, 5th: at 7.05 p. m. an auroral arch covered 70° of the northern horizon; it was about 5° in width and at its highest point about 8° above the horizon; the display continued until the early morning of the 6th. From 12.05 a. m. until daylight of the 12th a pale auroral light of straw color, with occasional beams, was observed.

Alpena, Michigan, 5th: an auroral light was first noticed at 8.40 p. m. consisting of a diffuse light without streamers; it disappeared at 10.30 p. m.

Grand Haven, Michigan, 5th: a faint aurora was visible